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*Two Extracts of the Journall of the Phil. Soc. of Oxford; one containing a Paper, communicated March 31, 1685, by the Reverend Dr Wallis, President of that Soc. concerning the strength of Memory when applied with due attention: the other, dated Dec. 15th, 1685, describing a large Stone Voided by way of Urine.*

*The first Extract.*

UPON Occasion of a Discourse, at a meeting of the *Philosophical Society at Oxford* (March 24, 168 $\frac{1}{2}$ ,) concerning the Advantage which those may have (as to Memory and the Application thereof,) who want their Sight: Dr *Wallis* confirmed it by this consideration, That, even we, that have our Ey-sight, can yet with more advantage apply our Memory (in matters of intent consideration) by Night, in the Dark, when all things are Quiet; than by Day, when sights and Noises are apt to divert our Thoughts. And gave instance, in his own application of his Memory, by Night, (in performing Arithmetical Operations in great numbers;) better then, by Day, he could have done: and, even by Day, we may better do it with our Eys shut, than open.

And, because some present seemed to be surpris'd at the particulars mentioned; he did at their next meeting (Mar. 31. 1685) give this further account of it.

Having had the Curiosity, heretofore, to try, how far the strength of Memory would suffice me, to perform some Arithmetical Operations (as *Multiplication, Division, Extraction of Roots, &c.*) without the assistance of Pen and Ink, or ought equivalent thereunto: And finding it to succeed well (for instance) in Extracting  
the

the Square *Root*, from Numbers of 8, 10, 12, or more places: I proceeded to try it (with success) in numbers of 20, 30, or 40 places. But was not curious to keep memorials of the particular numbers which I had so considered (as being but a Curiosity, and not of further use,) Till there happened on occasional Discourse of it with a Forraigner (*Johannes Georgius Pelslover, Regio-Montanus Borussus*) who coming to see the *University*, was pleased (as divers other Forraigners often do) to give me a visit; (*Febr. 18. 1670*) at a time when I was afflicted with a tedious and severe Quartan Ague, (which held me, for a whole year, from about *Michaelmas* then last past, till about the same time in the year following:) which caused me to pass many nights with little or no sleep.

He was desirous I would tell him some of those numbers which I had so considered. Which, at the present, (for the reason but now mentioned) I could not do: save only that, on *Dec. 22. 1669*, I had (by night, in the dark,) extracted the Square *Root* of 3, (with Ciphers adjoined,) continued to the Twentieth place of Decimal Fractions: Finding it to be

1. 73205, 08075, 68877, 29353, *fere.*

Which is the Square *Root* of 3, with Forty ciphers adjoined;

3. 00000, 00000, 00000, 00000, 00000, 00000, 00000, 00000.  
(which I had chanced to write down, because  $\sqrt{3}$  is a Surd which I might after have occasion to make use of) But added, that I could at pleasure perform the like at any time.

And when he further pressed me so to do; I did, that same night (by dark, in bed, without any other assistance than my Memory) propose to my self (at all adventures) this number, of 53 places.

2, 4681, 3579, 1012, 1411, 1315, 1618, 2017, 1921, 2224, 2628, 3023, 2527, 2931.

and

and found its Square Root (of 27 places ) to be  
157, 1030, 1687, 1482, 8058, 1715, 2171, *fere*,  
(Without any other Method of extracting *Roots*, than  
what is commonly taught in Books of Arithmetick.)

These numbers, (having fixed them in my Memory,  
by repeating the same Operation a night or two af-  
ter,) when he made me another visit, *March* the 11  
following, I did dictate to him from my Memory,  
(having not, before, committed them to writing) for  
him to write down and examine: And did, after-  
wards, write them down my self.

He did it seems, discourse this afterwards (at *London*)  
with M<sup>r</sup> *Oldenburg* (by whom he had before been di-  
rected to me;) to whom (as I remember) upon a Letter  
from him, I gave a like account as now I do.

I will not undertake, that my Memory is now so  
strong, as then it was, in my younger days: but do be-  
lieve, if occasion were, I could yet perform the like.  
But I have never tryed it (in so great numbers) since  
that time: Being by that time, sufficiently satisfyed,  
that, a reasonable good Memory, fixt with good atten-  
tion, is capable of being charged, with more than a  
man would at first imagine.

*The Second Extract. Dec, 15th. 1685.*

A Model, or pattern of a *Stone*, which came from  
the Bladder of M<sup>rs</sup>. *E.V. of Wallingford*, at the  
age of 63 years, *Aug. 7. 1685*, was communicated to  
the *Society*. The compass of it was  $5\frac{1}{2}$  inches; the length  
 $4\frac{3}{4}$  inches, the weight 3 ounces *Avoird*. This *Stone* was  
at its coming off, taken out by her Husband, with-  
out the help or Instrument of *Physician* or *Chirurgion*,  
and without effusion of Blood; since its coming off,  
she has been troubled with *Urinæ incontinentia*.

X x x

*Part*